Appendix B09: Index To Gas Turbine/Jet Engine Unit Cause Codes

GAS TURBINE/JET ENGINE UNITS

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BALANCE OF PLANT

TABLE B09-1 Balance of Plant: Auxiliary Systems - Auxiliary Steam

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3830	Auxiliary boiler
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3831	Auxiliary steam piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3832	Auxiliary steam valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3833	Auxiliary steam controls and instruments
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3834	Auxiliary boiler tube leaks
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Auxiliary Steam	3839	Other auxiliary steam problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-2 Balance of Plant: Auxiliary Systems - Closed Cooling Water Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3820	Closed cooling water pumps and motors
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3821	Closed cooling water piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3822	Closed cooling water valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3823	Closed cooling water heat exchangers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3824	Closed cooling water system fouling
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Closed Cooling Water Systems	3829	Other closed cooling water system problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-3 Balance of Plant: Auxiliary Systems - Fire Protection System

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Fire Protection System	3860	Fire protection system pumps
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Fire Protection System	3861	Fire protection system piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Fire Protection System	3862	Fire protection system valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Fire Protection System	3863	Fire protection system fouling
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Fire Protection System	3864	Fire protection system instrumentation and controls
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Fire Protection System	3869	Other fire protection system problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-4 Balance of Plant: Auxiliary Systems - Instrument Air

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Instrument Air	3850	Instrument air compressors

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Instrument Air	3851	Instrument air piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Instrument Air	3852	Instrument air valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Instrument Air	3853	Instrument air dryers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Instrument Air	3854	N2 backup to instrument air
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Instrument Air	3859	Other instrument air problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-5 Balance of Plant: Auxiliary Systems - Low-pressure Gas Compression System

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3870	Fuel Gas Compressor and Motors
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3871	Fuel Gas Compressor Piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3872	Fuel Gas Compressor Valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3873	Fuel Gas Compressor Heat Exchangers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3874	Fuel Gas Compressor Controls and Instrumentation
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3875	Fuel Gas Compressor Filters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3876	Fuel Gas Compressor Fire System
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Low-pressure Gas Compression System	3879	Fuel Gas Compressor - other
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-6 Balance of Plant: Auxiliary Systems - Miscellaneous (Auxiliary Systems)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Miscellaneous (Auxiliary Systems)	3898	Miscellaneous plant auxiliary process and services instrumentation and controls

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Miscellaneous (Auxiliary Systems)	3899	Other miscellaneous auxiliary system problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-7 Balance of Plant: Auxiliary Systems - Service Air

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Air	3840	Service air compressors
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Air	3841	Service air piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Air	3842	Service air valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Air	3843	Service air dryers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Air	3849	Other service air problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-8 Balance of Plant: Auxiliary Systems - Service Water (Open System)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3810	Service water pumps and motors
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3811	Service water piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3812	Service water valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3813	Service water heat exchangers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3814	Service water system fouling
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Auxiliary Systems	Service Water (Open System)	3819	Other service water problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-9 Balance of Plant: Electrical

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3600	Switchyard transformers and associated cooling systems - external (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3601	Switchyard transformers and associated cooling systems - external (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3610	Switchyard circuit breakers - external (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3611	Switchyard circuit breakers - external (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3612	Switchyard system protection devices - external (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3613	Switchyard system protection devices - external (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3618	Other switchyard equipment - external (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3619	Other switchyard equipment - external (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3620	Main transformer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3621	Unit auxiliaries transformer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3622	Station service startup transformer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3623	Auxiliary generators
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3624	Auxiliary generator voltage supply system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3629	Other switchyard or high voltage system problems - external
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3630	400-700 volt transformers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3631	400-700 volt circuit breakers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3632	400-700 volt conductors and buses
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3633	400-700 volt insulators

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3634	400-700 volt protection devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3639	Other 400-700 volt problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3640	AC instrument power transformers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3641	AC Circuit breakers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3642	AC Conductors and buses
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3643	AC Inverters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3644	AC Protection devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3649	Other AC instrument power problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3650	DC instrument power battery chargers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3651	DC circuit breakers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3652	DC conductors and buses
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3653	DC protection devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3659	Other DC power problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3660	4000-7000 volt transformers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3661	4000-7000 volt circuit breakers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3662	4000-7000 volt conductors and buses
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3663	4000-7000 volt insulators
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3664	4000-7000 volt protection devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3669	Other 4000-7000 volt problems

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3670	12-15kV transformers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3671	12-15kV circuit breakers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3672	12-15kV conductors and buses
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3673	12-15kV insulators
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3674	12-15kV protection devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3679	Other 12-15kV problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3680	Other voltage transformers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3681	Other voltage circuit breakers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3682	Other voltage conductors and buses
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3683	Other voltage insulators
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3684	Other voltage protection devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3689	Other voltage problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Electrical		3690	Station Service Power Distribution System, General
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-10 Balance of Plant: Miscellaneous (Balance of Plant)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3950	Process computer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3960	Thermal derating (thermal efficiency losses in balance of plant when specific cause(s) unknown)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3970	Distributive Control System (DCS) - process computer

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3971	DCS - data highway
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3972	DCS - hardware problems (including card failure)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3973	DCS - internal and termination wiring
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3974	DCS - logic problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3975	DCS - upgrades
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3979	Other DCS problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3980	Programmable Logic Controller (PLC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3981	PLC - data highway
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3982	PLC - hardware problems (including card failure)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3983	PLC - internal and termination wiring
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3984	PLC - logic problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3985	PLC - upgrades
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3989	Other PLC problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3995	Powerhouse heating and ventilating systems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3996	Air conditioning systems - rooms and areas
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3998	Balance of plant overhaul/outage
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Miscellaneous (Balance of Plant)		3999	Other miscellaneous balance of plant problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-11 Balance of Plant: Power Station Switchyard					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**

Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Power Station Switchyard		3700	Power Station switchyard (non generating unit equipment)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Power Station Switchyard		3710	Transmission line (connected to powerhouse switchyard to 1st Substation)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Power Station Switchyard		3720	Transmission equipment at the 1st substation (see code 9300 if applicable)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Balance of Plant	Power Station Switchyard		3730	Transmission equipment beyond the 1st substation (see code 9300 if applicable)
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

EXPANDER TURBINE

TABLE B09-12 Expander Turbine: Expander Turbine

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7800	Couplings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7810	Shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7820	Bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7830	Blades
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7840	Discs
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7850	Spacers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7860	Nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7870	Heat shields
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7880	Exhaust diffusers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7890	Seal oil system and seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7900	Inner casing

Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7910	Outer exhaust casing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7920	Lube oil system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7930	Controls and instrumentation
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7940	Evactor
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7950	Major overhaul
Gas Turbine/Jet Engine (Simple Cycle Operation)	Expander Turbine	Expander Turbine		7960	Other expander turbine problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

EXTERNAL

Use this set of codes to report events caused by external factors (flood, lightning, etc.); economic factors (lack of fuel, labor strikes, etc.); operator training; and transmission system problems external to the plant.

TABLE B09-13 External: Catastrophe

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9000	Flood
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9001	Drought
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9010	Fire including wildfires, not related to a specific component
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9020	Lightning
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9025	Geomagnetic disturbance
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9030	Earthquake
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9031	Tornado
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9035	Hurricane

Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9036	Storms (ice, snow, etc)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Catastrophe		9040	Other catastrophe
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-14 External: Economic					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		0	Reserve shutdown
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9130	Failure of fuel supplier to fulfill contractual obligations or a pre-arranged deal due to physical fuel disruptions or operational impairments (e.g. force majeure on a pipeline or compressor down; making the pipeline incapable of making its firm deliveries.)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9131	Lack of fuel – due to contractual or tariff provisions that allow for service interruption or price fluctuations during peak demand periods.
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9134	Fuel conservation
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9136	Problems with Primary Fuel for Units with Secondary Fuel Operation
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9137	Ground water or other water supply problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9140	Plant modifications to burn different fuel that are not regulatory mandated
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9150	Labor strikes company-wide problems or strikes outside the company's jurisdiction such as manufacturers (delaying repairs)

					or transportation (fuel supply) problems.
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9151	Labor strikes direct plant management grievances that result in a walkout or strike are under plant management control.
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9160	Other economic problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9180	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9181	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9182	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9183	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9184	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9185	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9186	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9187	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9188	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9189	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9190	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9191	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9192	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9193	Economic (for internal use at plants only)

Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9194	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9195	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9196	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9197	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9198	Economic (for internal use at plants only)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Economic		9199	Economic (for internal use at plants only)
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-15 External: Fuel Quality

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9200	High ash content (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9201	High ash content (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9205	Poor quality natural gas fuel, low heat content
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9220	High sulfur content (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9221	High sulfur content (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9230	High vanadium content (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9231	High vanadium content (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9240	High sodium content (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9241	High sodium content (not OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9260	Low BTU oil (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9261	Low BTU oil (not OMC)

Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9290	Other fuel quality problems (OMC)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Fuel Quality		9291	Other fuel quality problems (not OMC)
Notes: 1) For use with Unit Codes 300–399 and 700–799. 2) Use code 9603 to 9653 (Gas Turbine) or 9604 to 9654 (Jet Engine) if the fuel quality results in excess stack emissions through no fault in the pollution control equipment. Use the appropriate equipment code to report fouling and slagging.					

TABLE B09-16 External: Miscellaneous (External)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Miscellaneous (External)		9300	Transmission system problems other than catastrophes (do not include switchyard problems in this category; see codes 3600 to 3629, 3720 to 3730)
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Miscellaneous (External)		9310	Operator training
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Miscellaneous (External)		9320	Other miscellaneous external problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	External	Miscellaneous (External)		9340	Synchronous Condenser Operation
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

GAS TURBINE

TABLE B09-17 Gas Turbine: Auxiliary Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5110	Lube oil system - general
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5111	Lube oil pumps
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5112	Lube oil coolers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5113	Lube oil valves/piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5114	Lube oil filters

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5115	Oil vapor extractor
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5116	Power Augmentation System Equipment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5117	Power augmentation piping
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5118	Power augmentation valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5119	Power augmentation controls
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5120	Hydraulic oil system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5121	Hydraulic oil system pumps
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5122	Hydraulic oil system piping/valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5130	Starting system (including motor)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5140	Battery and charger system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5150	Turning gear and motor
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5151	Load gear compartment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5160	Cooling and seal air system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5170	Cooling water system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5180	Anti-icing system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Auxiliary Systems		5190	Other auxiliary system problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-18 Gas Turbine: Exhaust Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5100	Chamber

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5101	Hoods
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5102	Vanes/nozzles
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5103	Silencer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5104	Cones
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5105	Diverter Dampers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5106	Exhaust Stack
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5108	High engine exhaust temperature
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Exhaust Systems		5109	Other exhaust problems (including high exhaust system temperature not attributable to a specific problem)
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-19 Gas Turbine: Fuel, Ignition, and Combustion Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5040	Fuel tanks
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5041	Fuel piping and valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5042	Fuel nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5043	Fuel filters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5044	Liquid fuel oil pump
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5046	Liquid fuel oil transfer/forwarding pump
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5047	Liquid fuel purge system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5048	Gas fuel system including controls and instrumentation

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5049	Other fuel system problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5050	Ignition system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5051	Pilot fuel piping and valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5052	Pilot fuel nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5053	Pilot fuel filters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5054	Water injection system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5060	Atomizing air system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5065	NOx water injection system including pump
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5066	NOx steam injection system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5070	Combustor casing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5071	Combustor liner
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5072	Combustor caps
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5073	Flame scanners
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5074	Flashback including instrumentation
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5075	Blade path temperature spread
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Fuel, Ignition, and Combustion Systems		5079	Other combustor problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-20 Gas Turbine: Inlet Air System and Compressors - Compressors

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5010	High pressure shaft

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5011	High pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5012	High pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5013	Compressor casing and bolts
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5014	Compressor diaphragms
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5015	Compressor seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5016	High pressure compressor bleed valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5017	Low pressure compressor bleed valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5019	Other high pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5020	Low pressure shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5021	Low pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5022	Low pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5029	Other low pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5030	Supercharging fans
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5035	Compressor washing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5036	Compressor shaft and bearings for two-shaft machines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5037	Inlet bleed heat valve
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Compressors	5039	Other compressor problems
Notes: 1) For use with Unit Codes 300–399 and 700–799. 2) Use HP compressor if only one.					

TABLE B09-21 Gas Turbine: Inlet Air System and Compressors - Ducts and Filters

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5000	Inlet air ducts
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5001	Inlet air vanes/nozzles
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5002	Inlet air filters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5003	Inlet cone
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5004	Inlet air chillers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5005	Inlet air evaporative coolers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5006	Inlet air foggers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Inlet Air System and Compressors	Ducts and Filters	5009	Other inlet air problems
Notes: 1) For use with Unit Codes 300–399 and 700–799. 2) Use HP compressor if only one.					

TABLE B09-22 Gas Turbine: Miscellaneous (Gas Turbine)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5200	Reduction gear
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5201	Load shaft and bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5205	Main coupling between the turbine and generator
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5206	Clutch
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5210	Intercoolers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5220	Regenerators
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5230	Heat shields
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5240	Fire detection and extinguishing system (including hazardous gas detection system)

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5241	Fire in unit
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5245	Gas Turbine Control System - data highway
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5246	Gas Turbine Control System - hardware problems (including card failure)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5247	Gas Turbine Control System - internal and termination wiring
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5248	Gas Turbine Control System - logic problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5249	Gas Turbine Control System - upgrades
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5250	Other controls and instrumentation problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5255	Computer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5260	Major overhaul (use for non-specific overhaul only; see page B-CCGT-2)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5261	Gas turbine/compressor washing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5262	Gas turbine exchange
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5269	Combustion Inspection (CI)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5270	Hot end inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5272	Boroscope inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5274	General unit inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5280	Vibration (not engine) in unit not attributable to bearings or other components
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5285	Gas turbine vibration
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5286	Gas turbine lockout

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5290	Gas turbine performance testing - individual engines (use code 9999 for total unit performance testing)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5292	Turbine Overspeed Trip Test - Gas Turbine
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5295	Synchronous condenser equipment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5298	Main gas filter
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Miscellaneous (Gas Turbine)		5299	Other miscellaneous gas turbine problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-23 Gas Turbine: Turbine

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5080	High pressure shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5081	High pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5082	High pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5083	High pressure nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5084	High pressure casing/expansion joints
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5085	Interstage gas passages - HP
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5086	High pressure shaft seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5087	Thrust bearing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5088	Gas turbine cooling system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5089	Other high pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5090	Low pressure shaft

Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5091	Low pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5092	Low pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5093	Low pressure nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5094	Low pressure casing/expansion joints
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5095	Interstage gas passages - LP
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5096	Low pressure shaft seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5097	Other low pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5098	Expansion joints
Gas Turbine/Jet Engine (Simple Cycle Operation)	Gas Turbine	Turbine		5099	HP to LP coupling
Notes: 1) For use with Unit Codes 300–399 and 700–799. 2) Use HP if only one.					

GENERATOR

This set of codes contains the generator, exciter, generator cooling systems, and generator controls. Note the main leads up to and includes the generator output breaker in this set of codes.

TABLE B09-24 Generator: Controls

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Controls		4700	Generator voltage control
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Controls		4710	Generator metering devices
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Controls		4720	Generator synchronization equipment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Controls		4730	Generator current and potential transformers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Controls		4740	Emergency generator trip devices

Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Controls		4750	Other generator controls and metering problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-25 Generator: Cooling System					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4610	Hydrogen cooling system piping and valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4611	Hydrogen coolers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4612	Hydrogen storage system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4613	Hydrogen seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4619	Other hydrogen system problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4620	Air cooling system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4630	Liquid cooling system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4640	Seal oil system and seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Cooling System		4650	Other cooling system problems
Notes: 1) For use with Unit Codes 300–399 and 700–799. 2) Report failures caused by water leaks into generator as codes 4500, 4510, etc.					

TABLE B09-26 Generator: Exciter					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4600	Exciter drive - motor
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4601	Exciter field rheostat
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4602	Exciter commutator and brushes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4603	Solid state exciter element

Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4604	Exciter drive - shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4605	Exciter transformer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Exciter		4609	Other exciter problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-27 Generator: Generator					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4500	Rotor windings (including damper windings and fan blades on hydro units)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4510	Rotor collector rings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4511	Rotor, General
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4512	Retaining Rings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4520	Stator windings, bushings, and terminals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4530	Stator core iron
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4535	Stator, General
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4536	Generator Heaters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4540	Brushes and brush rigging
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4550	Generator bearings and lube oil system (including thrust bearings on hydro units)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4551	Generator bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4552	Generator lube oil system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4555	Bearing cooling system

Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4560	Generator vibration (excluding vibration due to failed bearing and other components)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4570	Generator casing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4580	Generator end bells and bolting
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Generator		4590	Generator brakes
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-28 Generator: Miscellaneous (Generator)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4800	Generator main leads
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4805	Generator Bus Duct Cooling System
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4810	Generator output breaker
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4830	Major generator overhaul (720 hours or longer) (use for non-specific overhaul only; see page B-CCGT-2)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4831	Minor generator overhaul (less than 720 hours) (use for non-specific overhaul only; see page B-CCGT-2)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4840	Inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4841	Generator doble testing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4842	Reactive and capability testing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4850	Core monitor alarm
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4860	Generator neutral grounding equipment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Generator	Miscellaneous (Generator)		4899	Other miscellaneous generator problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

INACTIVE STATES

TABLE B09-29 Inactive States: Inactive States					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Inactive States	Inactive States		2	Inactive Reserve Shutdown
Gas Turbine/Jet Engine (Simple Cycle Operation)	Inactive States	Inactive States		9990	Retired unit
Gas Turbine/Jet Engine (Simple Cycle Operation)	Inactive States	Inactive States		9991	Mothballed unit
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

JET ENGINE

TABLE B09-30 Jet Engine: Auxiliary Systems					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5510	Lube oil system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5516	Power Augmentation System Equipment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5520	Hydraulic oil system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5530	Starting system (including motor)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5540	Battery and charger system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5550	Turning gear and motor
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5551	Load gear compartment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5560	Cooling and seal air system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5570	Cooling water system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5580	Anti-icing system

Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Auxiliary Systems		5590	Other auxiliary system problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-31 Jet Engine: Exhaust Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5500	Chamber
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5501	Hoods
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5502	Vanes/nozzles
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5503	Silencer
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5504	Cones
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5505	Diverter Dampers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5508	High engine exhaust temperature
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Exhaust Systems		5509	Other exhaust problems (including high exhaust temperature not attributable to a specific problem)
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-32 Jet Engine: Fuel, Ignition, and Combustion Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5440	Fuel tanks
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5441	Fuel piping and valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5442	Fuel nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5443	Fuel filters

Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5444	Liquid fuel oil pump
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5445	Liquid fuel oil transfer/forwarding pump
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5446	Liquid fuel purge system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5447	Gas fuel system including controls and instrumentation
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5449	Other fuel system problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5450	Ignition system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5451	Pilot fuel piping and valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5452	Pilot fuel nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5453	Pilot fuel filters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5454	Water injection system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5455	Fuel nozzle/vane cooling air system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5460	Atomizing air system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5470	Combustor casing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5471	Combustor liner
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5472	Combustor caps
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5473	Flame scanners
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5474	Flashback (including instrumentation)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5475	Blade path temperature spread
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Fuel, Ignition, and Combustion Systems		5479	Other combustor problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-33 Jet Engine: Inlet Air System and Compressors - Compressors					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5410	High pressure shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5411	High pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5412	High pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5413	Other high pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5414	Compressor diaphragms/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5420	Low pressure shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5421	Low pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5422	Low pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5429	Other low pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5430	Supercharging fans
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5435	Compressor washing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5436	Compressor shaft and bearings for two-shaft machines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Compressors	5439	Other compressor problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-34 Jet Engine: Inlet Air System and Compressors - Ducts and Filters					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5400	Inlet air ducts
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5401	Inlet air vanes/nozzles

Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5402	Inlet air filters
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5403	Inlet and exhaust cones
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5404	Inlet air chillers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5405	Inlet air evaporative coolers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5406	Inlet air foggers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Inlet Air System and Compressors	Ducts and Filters	5409	Other inlet air problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-35 Jet Engine: Miscellaneous (Jet Engine)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5600	Reduction gear
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5601	Load shaft and bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5605	Main coupling between the turbine and generator
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5606	Clutch
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5610	Intercoolers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5620	Regenerators
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5630	Heat shields
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5640	Fire detection and extinguishing system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5641	Fire in unit
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5645	Jet Engine Control System - data highway

Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5646	Jet Engine Control System - hardware problems (including card failure)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5647	Jet Engine Control System - internal and termination wiring
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5648	Jet Engine Control System - logic problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5649	Jet Engine Control System - upgrades
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5650	Other controls and instrumentation problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5660	Major overhaul (use for non-specific overhaul only; see page B-CCGT-2)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5661	Engine/compressor washing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5662	Engine exchange
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5665	Engine shafts and bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5670	Hot end inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5672	Boroscope inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5674	General unit inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5680	Vibration (not engine) in unit not attributable to bearings or other components
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5685	Engine vibration
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5686	Jet engine lockout
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5690	Engine performance testing - individual engines (use code 9999 for total unit performance testing)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5692	Turbine Overspeed Trip Test - Jet Engine

Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5695	Synchronous condenser equipment
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Miscellaneous (Jet Engine)		5699	Other miscellaneous jet engine problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-36 Jet Engine: Turbine					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5480	High pressure shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5481	High pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5482	High pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5483	High pressure nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5484	High pressure casing/expansion joint
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5485	Interstage gas passages
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5486	High pressure shaft seals
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5487	Thrust bearing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5489	Other high pressure problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5490	Low pressure shaft
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5491	Low pressure bearings
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5492	Low pressure blades/buckets
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5493	Low pressure nozzles/vanes
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5494	Low pressure casing/expansion joints
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5497	Other low pressure problems

Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5498	Expansion joints
Gas Turbine/Jet Engine (Simple Cycle Operation)	Jet Engine	Turbine		5499	Shaft seals
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

PERFORMANCE

TABLE B09-37 Performance: Performance

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Performance	Performance		9997	NERC Reliability Standard Requirement
Gas Turbine/Jet Engine (Simple Cycle Operation)	Performance	Performance		9998	Black start testing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Performance	Performance		9999	Total unit performance testing (use appropriate codes for individual component testing)
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

PERSONNEL OR PROCEDURAL ERRORS

TABLE B09-38 Personnel or Procedural Errors: Personnel or Procedural Errors

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9900	Operator error
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9910	Maintenance personnel error
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9920	Contractor error
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9930	Operating procedure error
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9940	Maintenance procedure error
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9950	Contractor procedure error
Gas Turbine/Jet Engine (Simple Cycle Operation)	Personnel or Procedural Errors	Personnel or Procedural Errors		9960	Staff shortage
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

POLLUTION CONTROL EQUIPMENT

TABLE B09-39 Pollution Control Equipment: CO Reduction					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	CO Reduction		8840	CO Active catalyst
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	CO Reduction		8841	CO Support materials
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	CO Reduction		8842	CO Plugging
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	CO Reduction		8845	Other CO reduction problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-40 Pollution Control Equipment: Continuous Emissions Monitoring Systems (CEMS)					
UNIT TYPE	**SYSTEM**	**COMPONENT**	**SUB-COMPONENT**	**CAUSE CODE**	**DESCRIPTION**
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8700	CEMS Certification and Recertification
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8710	SO2 analyzer problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8720	NOx analyzer problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8730	CO analyzer problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8740	CO2 analyzer problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8750	O2 analyzer problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8760	Opacity monitor problems

Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8770	Flow monitor problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8780	Data acquisition system problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Continuous Emissions Monitoring Systems (CEMS)		8790	Miscellaneous CEMS problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-41 Pollution Control Equipment: Miscellaneous (Pollution Control Equipment)

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	Miscellaneous (Pollution Control Equipment)		8656	Controls and instrumentation
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-42 Pollution Control Equipment: NOx Reduction Systems - Catalytic Air Heaters

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8830	CAH NOx Active catalyst
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8831	CAH NOx Support materials
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8832	CAH NOx Plugging
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Catalytic Air Heaters	8835	Other CAH problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-43 Pollution Control Equipment: NOx Reduction Systems - Selective Catalytic Reduction Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8810	SCR NOx Reactor
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8811	SCR NOx Reagent

Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8812	SCR NOx Catalyst
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8813	SCR NOx Injection grid piping/valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8814	SCR NOx Catalyst support material
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8815	SCR NOx Soot blowers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8816	SCR NOx Plugging
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8817	SCR NOx Control system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8820	SCR NOx Ammonia injection grid piping/valves
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8821	SCR NOx Ammonia tanks, piping and valves (not injection)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8822	SCR NOx Ammonia air blowers
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8823	SCR NOx Other ammonia system problems
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Catalytic Reduction Systems	8825	Other SCR NOx problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-44 Pollution Control Equipment: NOx Reduction Systems - Selective Non-Catalytic Reduction Systems

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8800	SNCR NOx Reagent
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8801	SNCR NOx Carrier gas
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8802	SNCR NOx Control system
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8803	SNCR Performance Testing
Gas Turbine/Jet Engine (Simple Cycle Operation)	Pollution Control Equipment	NOx Reduction Systems	Selective Non-Catalytic Reduction Systems	8809	Other SNCR NOx problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

REGULATORY, SAFETY, ENVIRONMENTAL

Use these codes only for events not directly attributable to equipment failures. Inspections or testing of certain equipment due to regulation are reported using the appropriate equipment cause codes, and the fact that it was a regulatory requirement noted in the verbal description section.

TABLE B09-45 Regulatory, Safety, Environmental: Other Operating Environmental Limitations

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9663	Thermal discharge limits - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9664	Thermal discharge limits - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9673	Noise limits (not for personnel safety) - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9674	Noise limits (not for personnel safety) - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9678	Noise limits testing - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9679	Noise limits testing - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9683	Fish kill - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9684	Fish kill - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9693	Other miscellaneous operational environmental limits - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Other Operating Environmental Limitations		9694	Other miscellaneous operational environmental limits - jet engines

Notes: 1) For use with Unit Codes 300–399 and 700–799.

TABLE B09-46 Regulatory, Safety, Environmental: Regulatory

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Regulatory		9504	Regulatory (environmental) proceedings and hearings - regulatory agency initiated
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Regulatory		9506	Regulatory (environmental) proceedings and hearings - intervenor initiated
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Regulatory		9510	Plant modifications strictly for compliance with new or changed regulatory requirements (scrubbers, cooling towers, etc.)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Regulatory		9520	Oil spill in Gulf of Mexico (OMC)

Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Regulatory		9590	Miscellaneous regulatory (this code is primarily intended for use with event contribution code 2 to indicate that a regulatory-related factor contributed to the primary cause of the event)
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-47 Regulatory, Safety, Environmental: Safety

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Safety		9700	OSHA-related retrofit or inspection
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Safety		9720	Other safety problems
Notes: 1) For use with Unit Codes 300–399 and 700–799.					

TABLE B09-48 Regulatory, Safety, Environmental: Stack Emission

UNIT TYPE	SYSTEM	COMPONENT	SUB-COMPONENT	CAUSE CODE	DESCRIPTION
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9603	SO2 stack emissions - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9604	SO2 stack emissions - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9613	NOx stack emissions - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9614	NOx stack emissions - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9616	CO stack emissions - fossil
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9623	Particulate stack emissions - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9624	Particulate stack emissions - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9633	Opacity - gas turbines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9634	Opacity - jet engines
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9653	Other stack or exhaust emissions - gas turbines (use codes 9200 to 9290 if fuel quality causes pollution control equipment problems that result in excess stack emissions)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9654	Other stack or exhaust emissions - jet engines (use codes 9200 to 9290 if fuel quality causes pollution control equipment problems that result in excess stack emissions)
Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9657	Other stack or exhaust emissions testing - gas turbines

Gas Turbine/Jet Engine (Simple Cycle Operation)	Regulatory, Safety, Environmental	Stack Emission		9658	Other stack or exhaust emissions testing - jet engines
Notes: 1) For use with Unit Codes 300–399 and 700–799. 2) Include exhaust emissions.					